

Section Summary

- Developments in microscopy (microscope technology) have made it possible to look at the internal structures of cells.
- Cells contain a variety of organelles, each of which has its own structure and function. Some organelles are found in all cells, while others are found only in plant or animal cells.
- Advances in knowledge about cells have helped researchers find new ways to diagnose and treat diseases.

Review Questions

1. Why are electron microscopes more useful than light microscopes for looking at organelles?
2. Describe the functions of the following organelles: mitochondria, nucleolus, vacuole.
3. Examine the diagram on the right.
 - a. Does the diagram show a plant cell or an animal cell?
 - b. Which of the lettered structures helped you decide?
 - c. What is this structure called?
4. Draw a Venn diagram to compare the cell wall and the cell membrane.
5. Using **Figures 1.5** and **1.6** as a reference, draw diagrams or create a table to compare plant and animal cells. Focus on which organelles or other features they share and which parts are only found in one of these types of cells.
6. Imagine that the cell is a factory and each of the organelles is a machine. Working in a small group, focus on one organelle. Create a diagram and a short statement to convince the factory president of the importance of your organelle. How is it essential to the operation of the factory? Combine the diagrams from all the groups into a class map of this cell factory.
7. The graph on the right provides data on the number of mitochondria in each of three cell types.
 - a. Which cell type do you think requires the most food (in the form of the glucose it receives) for its functions?
 - b. Why do you think skin cells have the least number of mitochondria of the three types of cells studied?
8. What do you think would happen to other forms of life on Earth if most or all of the plant life disappeared? Explain your answer in terms of what goes on inside cells.

